

REMARKS

The above-identified patent application has been amended and Applicants respectfully request the Examiner to reconsider and again examine the claims as amended.

Claims 1, 2, 4-8 and 10-40 are pending in the application. Claims 1, 2, 4-8 and 12-16 are allowed and claims 10 and 11 are objected to. Claims 17-41 are rejected. Claims 10, 17 and 40 are amended herein. Claim 41 has been cancelled by this amendment. No new claims have been added by this amendment.

Applicant notes that the Examiner has maintained his objection to the drawings. Applicants do not agree with the drawing objection for the reasons set forth in the Response filed October 17, 2005. Nevertheless, Applicants have cancelled claim 41 without prejudice and thus the objection to the drawings is now moot. Applicants reserve the right to add this subject matter back into the claims in this or in a continuation application at a later dated.

The Examiner objected to claims 10 and 11 as depending upon cancelled claim 9. Applicant has amended claim 10 to depend from claim 1 which the Examiner has allowed. Claim 11 depends from claim 10. Thus, claims 10 and 11 are now also in condition for allowance.

The Examiner rejects claims 17 - 41 under 35 U.S.C. §102(b) as being anticipated by Kato (U.S. Pat. No. 4,939,568).

Applicants submit that claim 17 is patentably distinct over the cited reference since the reference neither describes nor suggests "... (a) at least a first device layer having first and second opposing surfaces ... including ... one or more semiconductor elements ... and ... a first dielectric material ... [and] a first conductive via electrically coupled to at least a portion of at least one of the one or more semiconductor elements and a second one of the first and second ends of the first conductive via exposed through the second surface of the first dielectric material (b) at least a second device layer having first and second opposing surfaces ... including ... one or more semiconductor elements ... and ... a second dielectric material having first and second opposing

surfaces [with] the second surface of the second dielectric material corresponding to the second surface of the second device layer ...[and] a second conductive via electrically coupled to at least a portion of at least one of the one or more semiconductor elements and a second one of the first and second ends of the first conductive via exposed through the second surface of the second dielectric material ... and (c) a first conductive interface having first and second opposing surfaces with the first surface disposed over at least a portion of the first surface of the first substrate such that at least a portion of the conductive interface is coupled to at least a portion of the first end of the first conductive via.

In particular, Kato neither describes nor suggests a second device layer which includes a substrate and a dielectric material having a first surface disposed against a second opposing surface of the conductive interface and a second opposing surface disposed against a ... surface[s] of the substrate as called for in Claim 17.

The Examiner equates interconnect terminal 7a to the conductive interface recited in Applicants' claim 17 (as noted by the Examiner in the Office Action, 7a is not labeled in Kato FIG. 3).

It is clear from Kato FIG. 3, however, that the Kato interconnect terminal 7a (as well as interconnect terminal 7b which is labeled in Kato FIG. 3) has one end coupled to conductive via 6a and an opposite end coupled to wiring layer 42. Thus, the insulating layers of Kato do not have "a ... surface disposed against a second opposing surface of the conductive interface" as called for in Claim 17.

To sustain a rejection under 35 U.S.C. §102, a single reference must disclose each and every element of the claimed invention.

In this case, the Kato reference fails to describe a structure in which two semiconductor structures are coupled through a conductive interface with each of the semiconductor structures having dielectric surfaces in contact with surfaces of the conductive interface as called for in

claim 17. Since the Kato conductive interface 7a, 7b are provided as part of the device layers (labeled as A1 in FIG. 3 of Kato), Kato neither describes nor suggests a structure in which a conductive interface is disposed between a first surface of a first device layer and a first surface of a second device layer.

Simply put, the portions of the Kato structure which the Examiner equates to the conductive interface recited in claim 17 are part of the devices. Thus, those portions of the Kato structure which the Examiner equates to the conductive interface recited in Applicants' claim 17 cannot be disposed between surfaces of the two devices as called for in claim 17.

Claims 18-39 each depend either directly or indirectly from base claim 17 and thus these claims are also patentably distinct over the cited reference generally for the reasons discussed above in conjunction with claim 17.

Applicants submit that Claim 40 is patentably distinct over the cited reference since the reference neither describes nor suggests a ... multi-layer semiconductor structure... comprising ...a first semiconductor wafer ...a second semiconductor wafer ... and at least a first conductive bonding interface segment disposed between the first and second semiconductor wafers...as called for in claim 40.

Again, the Examiner equates the interconnect terminal 7b described in Kato to the conductive bonding interface recited in Applicants' claim 40. Applicants have carefully reviewed the Kato reference and in particular the description of Fig. 3 in Kato, and it is Applicants' position that nothing in the Kato reference suggests that the Kato interconnect terminal 7b could function as a conductive bonding interface as called for in Claim 40. It is thus Applicants position that claim 40 is patentably distinct over the cited reference.

Applicants have cancelled claim 41 and thus the rejection thereof is now moot and will not be discussed.

In the Office Action dated December 20, 2006, the Examiner allowed Claims 1, 2, 4-8 and 12-16. The Examiner objected to claims 10 and 11 as depending upon a cancelled claim. Applicants have amended claims 10 and 11 to depend (directly and indirectly, respectively) from claim 1. Thus, Applicants submit that claims 10 and 11 are now also allowable.

Applicants have amended claims 17 and 40 to overcome the rejections in view of Kato and Applicants have cancelled claim 41.

Accordingly, in view of the above Amendments and Remarks, Applicants submit that Claims 1, 2, 4-8, 10-40 and the entire case are in condition for allowance and should be sent to issue and such action is respectfully requested.

The Examiner is respectfully invited to telephone the undersigning attorney if there are any questions regarding this Response or this application.

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Respectfully submitted,

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